Sub-Element 2.e—Radiological Assessment and Decisionmaking Concerning Relocation, Reentry, and Return

What the Policy Says	
	Intent NUREG-0654 provides that OROs should have the capability to make decisions on relocation, re-entry, and return of the general public. These decisions are essential for the protection of the public from the direct long-term exposure to deposited radioactive materials from a severe accident at a nuclear power plant. **Criterion 2.e.1:** Timely relocation, re-entry, and return decisions are made and coordinated as appropriate, based on assessments of the radiological conditions and criteria in the ORO's plan and/or procedures. (NUREG-0654, I.10; J.9; M.1). **Minimum Frequency** Criterion 2.e.1 is to be evaluated once in 6 years. The plume phase and the post-plume phase (ingestion, relocation, re-entry, and return) can be demonstrated separately. **Extent of Play** **Relocation:** OROs should demonstrate the capability to estimate integrated dose in contaminated areas and to compare these estimates with PAGs, apply decision criteria for relocation of those individuals in the general public who have not been evacuated but where projected doses are in excess of relocation PAGs, and control access to evacuated and restricted areas. Decisions are made for relocating members of the evacuated public who lived in areas that now have residual radiation levels in excess of the PAGs. Determination of areas to be restricted should be based on factors such as the mix of radionuclides in deposited materials, calculated exposure rates versus the PAGs, and field samples of vegetation and soil analyses. **Re-entry:** Decisions should be made regarding the location of control points and policies regarding access and exposure control for emergency workers and members of the general public who need to enter the evacuated area temporarily to perform specific tasks or missions. Examples of control procedures are: the assignment of, or checking for, direct-reading and non-direct-reading dosimetry for emergency workers; questions regarding the individual's objectives and locations expected to be visited and associated time frames; availability of maps and plots of radiation exposure rates; advice on areas to avoid; and procedures for exit including: monitoring of individuals, vehicles, and equipment; decision criteria regarding decontamination; and proper disposition of emergency worker dosimetry and maintenance of emergency worker radiation exposure records.

	Responsible OROs should demonstrate the capability to develop a strategy for authorized re-entry of individuals into the restricted zone, based on established decision criteria. OROs should demonstrate the capability to modify those policies for security purposes (for example, police patrols), for maintenance of essential services (for example, fire protection and utilities), and for other critical functions. They should demonstrate the capability to use decisionmaking criteria in allowing access to the restricted zone by the public for various reasons, such as to maintain property (for example, to care for farm animals or secure machinery for storage), or to retrieve important possessions. Coordinated policies for access and exposure control should be developed among all agencies with roles to perform in the restricted zone. OROs should demonstrate the capability to establish policies for provision of dosimetry to all individuals allowed to re-enter the restricted zone. The extent that OROs need to develop policies on re-entry will be determined by scenario events. **Return:** Decisions are to be based on environmental data and political boundaries or physical/geological features, which allow identification of the boundaries of areas to which members of the general public may return. Return is permitted to the boundary of the restricted area that is based on the relocation PAG. Other factors that the ORO should consider are, for example: conditions that permit the cancellation of the Emergency Classification Level and the relaxation of associated restrictive measures; basing return recommendations (that is, permitting populations that were previously evacuated to reoccupy their homes and businesses on an unrestricted basis) on measurements of radiation from ground deposition; and the capability to identify services and facilities that require restoration within a few days and to identify the procedures and resources for their restoration. Examples of these services and facilities are: medical and social services, utilities, roads, schools, and intermediate term housing for relocated persons.

Preparing to Evaluate This Criterion	Before the exercise, determine, according to the ORO's plan/procedures and the Extent of Play agreement:
	
	Relocation:
	• Is there a description of a procedure to estimate integrated dose in contaminated areas and compare it to the PAGs?
	• Is there a description of how areas to be restricted are determined based on the following factors:
	  ➢ The mix of radionuclides in deposited materials,
	  ➢ Calculated exposure rates vs. the PAGs, and
	  ➢ Field samples of vegetation and soil analyses?
	• Does the plan use the optional approach (230 μR/hr) to determine the restricted area boundary?
	• Is there provision to relocate those who reside in areas where the projected dose is in excess of relocation PAGs?
	• Is there a procedure to control access to evacuated and restricted areas and what agencies have that responsibility?

	Re-entry: • Is there a description of how to develop a coordinated strategy for authorized re-entry of individuals to the restricted zone? In this description, is consideration given to: ➢ Established exposure limits, ➢ Maintenance of essential services (e.g., fire protection, utilities), ➢ Security needs (e.g., police patrols), ➢ Maintenance of property (e.g., care for farm animals), and ➢ Retrieval of important possessions? • Is there a procedure for controlling the exposure of workers and members of the general public who temporarily re-enter the restricted zone(s)? • Does the procedure for exposure control include: ➢ Provisions for direct-reading dosimeters and non direct-reading dosimeters to individuals and/or their escorts entering the restricted zone, ➢ Ascertaining where workers and members of the public are going, why and for how long, ➢ Provision of maps and plots of radiation exposure rates, and ➢ Advising workers and members of the public on which areas to avoid? • Is there a description of how to develop exit procedures, including: ➢ Monitoring of individuals, vehicles and equipment, ➢ Decision criteria for decontamination, and ➢ Disposition of dosimeters and maintenance of the re-entry radiation exposure records of workers and members of the public who re-entered. **Return:** • Is it indicated that return is permitted to the boundary of the restricted area(s) based on: ➢ The relocation PAG, ➢ Changing conditions (e.g., cancellation of the ECL, relaxation of restrictive measures, change in measurements of radiation from ground deposition), and/or ➢ Restoration of services and facilities (e.g., medical and social services, utilities, roads, and schools)?

During the Exercise	During the exercise, in addition to evaluating activities related to the items listed above, be sure to: • Document how the ORO determined the area(s) to be restricted. • Note what the ORO does to control access to restricted areas. • Note the exposure limits, including the time period over which the dose would accumulate. • Document how the ORO determined who should be allowed to re-enter the restricted zone, and what provisions were made to determine and control their exposure. Where and to whom were dosimeters and exposure record cards to be turned in? • Document how the ORO provided for exit from the restricted area, including monitoring of persons, vehicles and equipment. • Note what the decision to allow people to return to the boundaries of the restricted area was based on. • Note if implementation of the decision was supported by restoration of services and facilities, such as: ➢ Decontamination of hot spots, if necessary, ➢ Utilities, ➢ Food stores and restaurants reopened, ➢ Hospitals restaffed and reopened, and ➢ Schools reopened. • Is there a procedure for providing medical and social assistance for relocated individuals?